

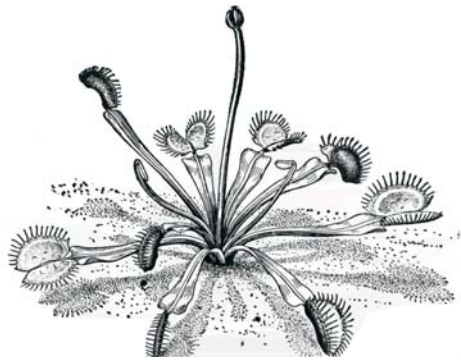
MEAP

**MICHIGAN
EDUCATIONAL
ASSESSMENT
PROGRAM**

**Grade 8
Science**

***Released Items
Winter 2004***

- 1 Tony always drinks water before and after his long bike rides. Why does his body need water when he exercises?
- A Drinking water after exercise allows the body to sleep.
 - B Drinking water after exercise helps to replace lost fluids.
 - C Drinking water before exercise helps increase the heart rate.
 - D Drinking water before exercise prevents the body from sweating.

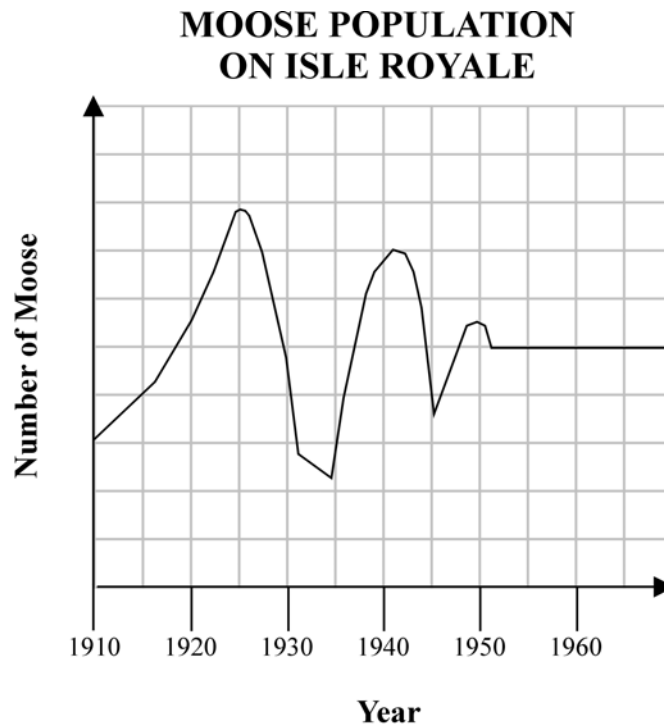


- 5 The Venus flytrap is a plant that both produces its own food through photosynthesis and obtains nutrients by consuming insects. Which of the following *best* describes the relationship between the Venus flytrap and the fly?
- A parasitic
 - B competitive
 - C predator-prey
 - D invertebrate-vertebrate

Use the information in the passage and the graph below to answer questions 9 through 11.

Northwest of Michigan's Upper Peninsula, in Lake Superior, is Isle Royale National Park. The island is 45 miles long and 5 to 8 miles wide. In the early 1900s, moose arrived on the island (apparently swimming over from Canada). With no predators on the island, and plenty of water plants, twigs, and leaves for the moose to feed on, the moose population increased greatly. By the 1930s, the food was depleted, and hundreds of moose starved. Following a fire, the food supply—and the moose—recovered. About 10 years later the food dwindled again, and the moose starved once more.

During 1948–1949, as a result of an extremely cold winter, Lake Superior froze over. A pack of eastern timber wolves migrated across the ice from Canada and established themselves on the island. The wolf population now numbers between 25 and 40. The wolves kill the very young, very old, sick or weak moose. The moose population, at a ratio of about 30 moose per wolf, is now stable and healthy. The balance is aided by a population of beaver, which builds dams for ponds and beaver meadows, supplying the moose with additional plant growth.



- 9 According to the graph, when was the population of moose highest?
- A 1910
 - B 1925
 - C 1935
 - D 1940

- 10** Why did the moose on Isle Royale starve?
- A** The fire killed the vegetation.
 - B** The beaver population consumed all of the food.
 - C** There were too many wolves competing for food.
 - D** There were too many moose, and the food supply dwindled.
- 11** How do the moose benefit from the beaver population?
- A** The beaver increase the water supply by building dams.
 - B** The beaver have no effect on the survival of the moose.
 - C** The beaver are an alternative food source for the moose.
 - D** The beaver create an environment favorable to plant growth.

Study the map below and answer items 42 through 45.



- 42 Which of the following shows the correct path that water takes through the region covered by the map?
- A St. Clair River → Lake Huron → Detroit River → Lake St. Clair → Lake Erie
 - B Lake Erie → Detroit River → Lake St. Clair → St. Clair River → Lake Huron
 - C Lake Huron → St. Clair River → Lake St. Clair → Detroit River → Lake Erie
 - D Lake St. Clair → Detroit River → Lake Erie → Lake Huron → St. Clair River
- 43 As the sun rises in the morning, the land begins to warm up while Lake Erie's water remains cool. Which of the following explains what happens to the density of the air over the land as the land warms up?
- A The density decreases as the air warms up and expands.
 - B The density increases as the air warms up and contracts.
 - C The density does not change because the cool air rises and is replaced with warmer air.
 - D The density does not change because the land temperature does not affect the air temperature.
- 44 Which area indicated on the map would *most likely* have the largest buildup of silt?
- A 1
 - B 2
 - C 3
 - D 4

ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER FOLDER.

45 Constructed-Response

Detroit is home to a large number of industrial businesses.

- Describe *three* consequences of industrial emissions from factory smokestacks in Detroit on the land to the east.

NOTHING WRITTEN IN THIS TEST BOOKLET WILL BE SCORED.

48 What unit of measure should Jerry use to report the volume of a liquid?

- A** degrees Celsius
- B** kilograms
- C** milliliters
- D** centimeters

**MEAP Science Winter 2004
Grade 8
Item 45**

Acceptable Response:

- pollution leading to acid rain
- global warming
- air pollution
- limited visibility
- water/groundwater pollution
- negative animal effects/issues
- negative plant effects/issues
- negative human effect/issues
- other acceptable consequences

Note: Destruction of the ozone layer is NOT an acceptable response.

Scoring Guide:

3 points = the student describes three consequences of industrial emissions.

2 points = the student describes two consequences of industrial emissions.

1 point = the student describes one consequence of industrial emissions.

0 points = the student fails to provide any acceptable information.

45

Constructed Response

people are going to
be affected by breathing
in the chemicals from the
pollution. The pollution
kills the fish and gives
them birth effects. When
the pollution is in the
air it keeps bird from
having babies.

Score Point: 3

This student describes three consequences of industrial emissions from factory smokestacks in Detroit on the land to the east (breathing chemicals, pollution kills fish, pollution in the air).

45

Constructed Response

Three consequences of industrial emissions from factory smokestacks in Detroit on the land to the east are, pollution, polluted river and streams and a bad smell.

Score Point: 2

This student describes two consequences of industrial emissions from factory smokestacks in Detroit on the land to the east (polluted river, bad smell).

45

Constructed Response

Three consequences
would be pollution, breaking down of the
ozone, and acid rain.

Score Point: 1

This student describes one consequence of industrial emissions from factory smokestacks in Detroit on the land to the east (acid rain).

45

Constructed Response

1. smoke goes east in Detroit and where the smoke went to from Detroit
2. smoke goes to Detroit and where the smoke went to from Detroit comes from the east
3. Detroit and the east - both get smoke either from their factories or from smoke that travels from the east or both

Score Point: 0

This student does not describe any consequences of industrial emissions from factory smokestacks in Detroit on the land to the east.

Middle School Key

Item #	Key	Benchmark
1	B	III.2.m.4
5	C	III.5.m.1
9	B	I.1.m.5
10	D	I.1.m.5
11	D	III.5.m.1
42	C	I.1.m.5
43	A	IV.1.m.1
44	A	V.1.m.2
45	CR	V.3.m.4
48	C	IV.1.m.2